03040201-04

(Thompson Creek)

General Description

The South Carolina portion of 03040201-04 (formerly 03040201-060 and incorporating 03040104-02) is located in Chesterfield County and consists primarily of ***Thompson Creek*** and its tributaries. The watershed occupies 221,467 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 50.3% forested land, 27.9% agricultural land, 11.1% forested wetland, 6.3% urban land, 3.3% scrub/shrub land, 0.6% water, 0.3% nonforested wetland, and 0.2% barren land.

While Thompson Creek originates in South Carolina, several of its tributaries originate in North Carolina including Deadfall Creek and Cedar Creek. Brown Creek originates near the headwaters of Thompson Creek and flows into North Carolina. Thompson Creek accepts drainage from Stone House Creek (Betties Branch), Clay Creek, Collins Branch, Deadfall Creek, Cedar Creek, Deep Creek (Mill Branch, Jenning Branch, Pitt Branch, Mill Creek, Horsepen Branch, Gulpins Branch, Crews Branch, Sellers Pond), and Tavern Branch. Jimmies Creek (Smarsh Branch) enters the system next, followed by Abrams Creek, Robeson Branch (Reedy Branch), Spencer Mill Creek (Sixmile Creek), and Indian Creek. Bear Creek (Rocky Prong, Teal Millpond) accepts drainage from Big Bear Creek (North Prong, Mill Branch, Cow Branch, Mash Branch, Strickland Branch) and Little Bear Creek (Polecat Branch, Bay Springs Branch, Bay Branch, Twitty Prong, Mount Prong, Mash Branch, Underground Branch, Gully Branch, Cross Branch) before flowing into Thompson Creek downstream of Indian Creek.

Beaver Creek flows into the system further downstream followed by Juniper Creek (Mill Creek, Wilkes Millpond, Cow Branch, Coker Branch, Little Juniper Creek, Campbell Lake, Pats Branch, Juniper Lake). The Cheraw State Park extends across Juniper Creek from Little Juniper Creek to downstream of Juniper Lake (also known as Eureka Lake). The Cheraw National Fish Hatchery is located within the Cheraw State Park. The Sand Hills State Forest extends over the lower portion of the watershed. Thompson Creek Watershed drains into the Pee Dee River. There are a total of 502.0 stream miles and 1,067.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-02305	RS02	FW	CLAY CREEK AT S-13-55
PD-673	BIO	FW	THOMPSON CREEK AT SC 109
RS-01013	RS01	FW	DEEP CREEK 75 FT UPSTREAM OF SC 9, 5.5 MI W OF CHESTERFIELD
PD-671	BIO	FW	DEEP CREEK AT SR 47
PD-246	S/W	FW	THOMPSON CREEK AT S-13-243 0.8 MI NE OF CHESTERFIELD
PD-247	S/W	FW	THOMPSON CREEK AT SC 9 1.5 MI ESE OF CHESTERFIELD
PD-677	BIO	FW	NORTH PRONG CREEK AT SC 102
PD-338	S/INT	FW	THOMPSON CREEK AT S-13-148 S OF CHERAW
RL-03346	RL03	FW	APPROX. MIDLAKE IN EUREKA LAKE IN CHERAW STATE PARK
CL-088	W	FW	JUNIPER LAKE, FOREBAY EQUIDISTANT FROM DAM AND SHORELINES
PD-340	W	FW	JUNIPER CREEK AT S-13-494

Clay Creek (RS-02305) – Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

Thompson Creek – There are four SCDHEC monitoring sites along Thompson Creek. This is a blackwater system, characterized by naturally low pH conditions. At the furthest upstream site ***(PD-673)***, aquatic life uses are partially supported based on macroinvertebrate community data. At the next site downstream ***(PD-246)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream ***(PD-247)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the furthest downstream site ***(PD-338)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and total nitrogen concentration. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported at this site.

Deep Creek – There are two SCDHEC monitoring sites along Deep Creek. At the upstream site ***(RS-01013)***, aquatic life uses are not supported due to turbidity excursions. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(PD-671)***, aquatic life uses are fully supported based on macroinvertebrate community data.

North Prong Creek (PD-677) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Eureka Lake (RL-03346) – Aquatic life uses are not supported due to pH excursions. DDT, DDD, and DDE (metabolites of DDT) were detected in the 2003 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are fully supported.

Juniper Lake (CL-088) – Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Juniper Creek (PD-340) – Aquatic life uses are not supported due to pH excursions. There is also a significant increasing trend in total nitrogen concentration. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

Natural Swimming Areas

FACILITY NAME *RECEIVING STREAM*	*PERMIT #* *STATUS*
CAMP JUNIPER JUNIPER LAKE/JUNIPER CREEK	13-N07 ACTIVE
CAMP FOREST JUNIPER LAKE/JUNIPER CREEK	13-N06 ACTIVE
CHERAW STATE PARK JUNIPER LAKE/JUNIPER CREEK	13-N01 ACTIVE

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-030	GB	MIDDENDORF	PATRICK

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
THOMPSON CREEK TOWN OF CHESTERFIELD PIPE #: 001 FLOW: 0.45	SC0025232 MINOR DOMESTIC
THOMPSON CREEK JW COVINGTON/COVINGTON MINE PIPE #: 001 FLOW: M/R	SCG730625 MINOR INDUSTRIAL
STONE HOUSE CREEK TRIBUTARY HANSON AGGREGATES SE/PAGELAND PIPE #: 001 FLOW: M/R	SCG730570 MINOR INDUSTRIAL
NORTH PRONG JEWEL CITY SAND CO./JEWEL CITY SAND MINE PIPE #: 001 FLOW: M/R	SCG730162 MINOR INDUSTRIAL
INDIAN CREEK TRIBUTARY CHESTERFIELD COUNTY/COUNTY CLAY PIT PIPE #: 001 FLOW: M/R	SCG730166 MINOR INDUSTRIAL
JUNIPER CREEK TRIBUTARY PALMETTO BRICK/MCBRIDE MINE PIPE #: 001 FLOW: M/R	SCG730386 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
HANSON AGGREGATES SE, INC. PAGELAND QUARRY	0797-25 GRANITE

FURR GRADING & PAVING, INC. TURNAGE MINE	1703-25 SAND
CHESTERFIELD COUNTY COUNTY PIT	0272-25 SAND/CLAY
JEWEL CITY SAND CO., INC JEWEL CITY SAND MINE	1147-25 SAND
PALMETTO BRICK CO. MCBRIDE MINE	1410-25 KAOLIN
B&B CONSTRUCTION CO. BOATWRIGHT	1599-25 SAND
JW COVINGTON JW COVINGTON MINE	1561-25 SAND
JOHN F. STROUD & SON STROUD & SON 265 MINE	1777-25 SAND

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Patrick, Chesterfield, Ruby, and Mt.Croghan, and a portion of the Town of Cheraw. Water service is available in the above towns, but sewer services are limited to Chesterfield and the Cheraw urban area. The Town of Chesterfield has recently extended water and sewer service east of the community to serve a local industrial park, but few other extensions are planned in the next five years. Commercial and industrial development is likely west of Cheraw and east of Chesterfield. The lower portion of the watershed (near Patrick) is in public ownership as part of the Sand Hills State Forest, and development will be limited as a result. Watershed 03040104-02, to the west of this watershed, has a low to moderate potential for growth. A portion of the Town of Pageland resides in this watershed and reflects the edge of the Charlotte Metroplex; future growth is expected. Pageland and the area immediately outside of the town have water and sewer service.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for ***Thompson Creek*** (monitoring sites ***PD-246*** and ***PD-247***) to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The nonpoint sources that have been determined to be contributors to Thompson Creek impairment include wildlife; grazing livestock and livestock depositing manure directly into streams; land application of poultry litter; and malfunctioning septic systems. The TMDL would require reductions of 68% and 82% in the current loads to the creeks, respectively, to meet standards.

Special Projects

Fecal Coliform Bacteria TMDL Implementation for the Thompson Creek Watershed Located in Chesterfield County

Following a previous Section 319-funded effort to develop a fecal coliform TMDL for Thompson Creek, the Pee Dee Resource Conservation and Development Council (RC&D) received a second 319 grant to implement the TMDL. The goal of the project was to reduce loading in the watershed so that water quality as measured at PD-246 and PD-247 would meet water quality standards for fecal coliform bacteria. The RC&D, along with the Chesterfield Soil and Water Conservation District and the Department of Natural Resources recruited homeowners and volunteers throughout the watershed to participate in cost-share efforts. This included installing a large number of agricultural best management practices (BMPs) such as stream exclusion fencing, alternative water sources and heavy use protection areas. Project staff also identified and repaired a number of failing septic systems throughout the watershed. This project ended in late 2007. Preliminary data suggests that the RC&D's efforts were successful in reducing the amount of bacteria in Thompson Creek. Monitoring will continue in order to fully demonstrate the project's effectiveness.